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Serial No. 10/716,697

Remarks

Amendments

No amendments have been made to the specification, claims or drawing.

Claim Rejection – 35 USC 102

Claim 13 has been rejected under 35 USC 102(b) as being anticipated by M. Weiser *et al.*, US Patent No. 4,860,329 issued on August 22, 1989 (hereinafter *Weiser*). The Examiner states her position as follows:

Regarding claim 13, Weiser teaches a micro-miniature x-ray apparatus for steering focused x-rays in a selected direction (Figure 6), said apparatus comprising: a radiation source (62) for generating both Bremsstrahlung photons and characteristic x-rays, a filter (90) for preferentially transmitting the characteristic x-rays but blocking the Bremsstrahlung photons, a moveable element (Figure 18, and Column 9, lines 5-16) for focusing or collimating the transmitted characteristic x-rays into a beam and means for controlling (304) the position of the movable element. Weiser teaches a “micro-miniature” apparatus, since no language in the claim, nor specific, limiting, definition in the specification, precludes an apparatus of Weiser’s size, nor precludes an apparatus that can operate in “micro” ranges (Column 10, lines 8 and 20-23).

This rejection is respectfully traversed for the reasons set forth below.

- (1) **Anticipation:** The law of anticipation under Section 102 is clear, as set forth in MPEP 2131: “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). “The identical invention must be shown in as complete detail as is contained in the ...claim.” *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Each and every element of Applicants’ claims is not found in Sun, as discussed below.

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- (2) **Micro-miniature:** Applicants' claim 13 requires that the x-ray apparatus be a *micro-miniature* apparatus (claim 13, line 25). To this end Applicants' specification sets forth at least two aspects of the invention that enable those skilled in the art to understand the scope of claim 13; to wit, (i) FIGs. 1-3 and 5-10, and the associated portions of the specification, describe how Applicants utilize MEMS technology and/or integrated circuit processing techniques to implement the micro-miniature apparatus; and (ii) the specification at page 4, lines 6-8, describes that the inventive apparatus "is typically mounted on a catheter in order to insert the [x-ray] source into a body vessel or other cavity and thereby convey the apparatus to a point that is proximate diseased tissue region 30." In contrast, Weiser describes what can only be fairly characterized as a *macro x-ray apparatus*. For example, it is patently clear from FIGs. 1-4 that Weiser describes a piece of test equipment for "measurement applications" (column 5, line 28) that would typically be found sitting on a lab bench, not affixed to the end of a catheter. Surely, one skilled in the art would not expect to insert such a "kluge" into a body vessel to treat diseased tissue. Accordingly, it is respectfully submitted that Weiser does not teach a "micro-miniature x-ray apparatus" as required by claim 13. Nevertheless, even assuming, *arguendo*, that Weiser does provide such a teaching, it still does not anticipate claim 13 for the additional reasons set forth below.
- (3) **Radiation Source:** Claim 13 also requires "a radiation source for generating both Bremsstrahlung photons and characteristic x-rays." The Examiner points to x-ray tube 62 of Weiser as if it satisfies this requirement of Applicants' claim, but she cites no portion of the Weiser text in support of her conclusion. In fact, Weiser is completely silent on this issue. Moreover, the Examiner has made no case that, somehow, Weiser's x-ray tube 62 *inherently* generates both Bremsstrahlung photons and characteristic x-rays. To make out a case for inherency it is black letter law that the Examiner is required to provide *extrinsic evidence* that both x-ray components are *necessarily* present:

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To serve as anticipation when the reference is silent about the asserted inherent characteristic, such gap in the reference may be filled with recourse to *extrinsic evidence*. Such evidence *must* make clear that the missing descriptive matter is *necessarily* present in the thing described in the reference and that it would be so recognized by persons of ordinary skill. *Continental Can Co. USA v. Monsanto Co.*, 948 F. 2d 1264, 20 USPQ 2nd 1746, 1749-50 (Fed. Cir. 1991). (emphasis added)

Since the Examiner has supplied no such extrinsic evidence, she has failed to make out a prima facie case of anticipation. Nevertheless, even assuming, *arguendo*, that Weiser does provide such a teaching, it still does not anticipate claim 13 for the additional reasons set forth below.

- (4) **Filter:** Claim 13 also requires “a filter for preferentially transmitting the characteristic x-rays but blocking the Bremsstrahlung photons.” The Examiner points to “primary filter 90” of Weiser as if it satisfies this requirement of Applicants’ claim, but she cites no portion of the Weiser text in support of her conclusion. In fact, Weiser at column 5, lines 19-28 teaches that filter element 90 includes filter element 126 disposed “within at least one of the diametric bores such as bore 122.” Weiser further describes the filter element 126 as being “constituted to minimize the transmission of unwanted X-radiation wavelengths for certain measurement applications.” Thus, it is clear that filter 126 is a wavelength-sensitive filter that transmits a particular characteristic x-ray component. But, no mention is made of filtering out Bremsstrahlung photons. Note that a wavelength-sensitive filter would be an ineffective filter of Bremsstrahlung photons because the latter are *broadband*. This problem is addressed by Applicants at page 5, lines 3-13 of their specification. Thus, Weiser fails to teach a filter that *not only* preferentially transmits characteristic x-rays *but also* blocks Bremsstrahlung photons, as required by claim 13, lines 29-30.

Accordingly, it is respectfully submitted that claim 13 is not anticipated by Weiser.

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Allowable Subject Matter

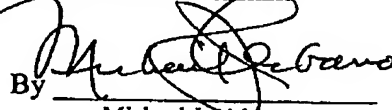
Applicants acknowledge and gratefully appreciate that the Examiner has indicated that claims 1-12 have been allowed.

Conclusion

In view of the foregoing, reconsideration of claim 13, and passage of this application to issue, are hereby respectfully requested. If during the consideration of this paper, the Examiner believes that resolution of the issues raised will be facilitated by further discussion, she is urged to contact the undersigned attorney at 610-691-7710 (voice) or 610-691-8434 (fax).

Respectfully,

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